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| 10/817,535 | 04/02/2004 | Amir Levy | 400200 | 4873 |

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06/07/2006

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EXAMINER

KNOX, STEWART

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-----------------------------|--|
| Office Action Summary | Application No. 10/817,535 | Applicant(s) LEVY ET AL. | |
| | Examiner Stewart T. Knox | Art Unit 3641 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2 and 7-12 is/are rejected.
7) ☒ Claim(s) 3-6 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The replacement drawings were received on 4/18/2006. These drawings are acceptable, and the objection is withdrawn.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The description that “spin of the submunition grenade applies a centrifugal force on the firing pin” (claim 1, lines 27-28) is not enabled by the fact that the centrifugal force acts outwardly from the fuse, in a plane perpendicular to the firing pin. Clarification is required on how the centrifugal force causes longitudinal motion of the firing pin.

3. In a conversation with Robert Diehl on the telephone, a tentative agreement was made that calling it a “rotational force” instead of “centrifugal force” in line 23 of claim 1 would be sufficient to overcome the rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2 and 12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Levy (4,811,664). Levy discloses an improved fuse for a submunition warhead including a firing pin (3) able to rotatably reciprocate between a forward and retracted position along threadedly engaged screw threads (9), a slider (14) with a cavity (23), a stab detonator (15), a time delay detonator (16, 19), a spin activated swivel mounted striker (20) such that spin of the submunition grenade applies a centrifugal force to move the slider into the armed position (col. 3, lines 1-2), and a fully mechanical inertial releasable safety apparatus for preventing swiveling of said swivel mounted striker (pin 27 in combination with housing element 30).

6. In regards to claim 2, Levy discloses a pyrotechnic combustion charge (19) and percussion cap (17). In regards to claim 12, the improved fuze is part of a submunition grenade.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claim 7/2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levy as applied to claim 1 above, and further in view of Postler (4,848,235). Levy discloses the claimed invention except for a radially positioned centrifugally removable block to hold the swivel mounted striker in place. Postler teaches a radially positioned centrifugally removable block (fig. 3, elem. 58, and col. 9 lines 4-6) in order to provide the arming device with a safety block that will be removed automatically by centrifugal forces during flight. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the block (35) and housing (30) of Levy with the centrifugally removable block (58) of Postler. Such a modification would provide Levy with a safety block that will be removed automatically by centrifugal forces during flight, thereby allowing the swivel mounted striker to activate the time delay detonator ignition system.
9. Claims 8/1-2, 9 and 10 are rejected under 35 U.S.C. 103(a) as being obvious over Levy as applied above. In regards to claim 8, Levy discloses a pin (figs. 2 and 5, elem. 27) and a resilient retaining means (figs. 2 and 5, unmarked), able to reciprocate between an inner and outer position, said resilient retaining means for urging said flat pin towards said inner position, such that upon expulsion, inertial forces cause the pin to slide away (col. 6, lines 38-45) subsequently allowing the slider to be released which releases the swivel mounted striker. Levy does not, however, disclose that the inertial forces cause the pin to *slide out of the fuze housing*. It would have been an obvious matter of design choice to a person of ordinary skill in the art at the time the invention was made to have the head portion of the pin of Levy to slide out of the fuze housing when withdrawn, because applicant has not disclosed that having the pin slide out of the fuze housing provides an advantage, is used for a particular purpose, or solves a stated problem.

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One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with the pin that does not leave the fuze housing as taught by Levy, because it also responds to inertial forces and allows the slider assembly to slide out of the fuze housing, and since it appears to be an arbitrary design consideration which fails to patentably distinguish over Levy. In regards to claim 9, Levy discloses inertial forces including centrifugal forces resulting from the spinning of the submunition grenade (col 6, lines 38-45). In regards to claim 10, Levy discloses that it is known to use drag-producing means to impart an inertial force in order to arm or activate a fuse (col. 2, lines 56-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use drag means interchangeably with centrifugal forces to provide an inertial force capable of removing the pin.

10. Claim 11/1-2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levy as applied to claims 1-2, and further in view of Chemiere (5,275,101). Levy and Postler disclose the claimed invention including a fully mechanical inertially releasable safety apparatus comprising a spring-pin resiliently mounted within a cylinder and retractable there into, but does not disclose that the cylinder and spring are aligned with the longitudinal axis of the submunition grenade. Chimiere discloses a fully mechanical inertially releasable safety apparatus comprising a spring pin (fig. 4 elems. 19 and 20) resiliently mounted within a cylinder (29), said cylinder being aligned with the longitudinal axis of the submunition grenade in order that the inertial jolt occurring when the cargo projectile is launched overcomes the resistance of the spring and unlocks the slider, while holding it in place before launch (col. 5, lines 43-54 and 62-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the axially-oriented spring-pin (27) of Levy with the longitudinally-oriented spring-pin

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of Chemiere, since such a modification would provide the fuze of Levy with an inertially releasable safety apparatus sensitive to longitudinal forces.

Allowable Subject Matter

11. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: see response to arguments.

Response to Arguments

13. Applicant's arguments filed 4/18/2006 have been fully considered but they are not persuasive.

14. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the "self-neutralizing mode") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As written, claim 1 requires "a time delay detonator ignition system for delayed ignition of a stab detonator and a spin activated swivel mounted striker for activating the time delay detonation system,..." which is presented as claimed and pictured in Levy, and "a fully mechanical inertial releasable safety apparatus...to prevent initiation of said time delay detonator ignition system" which is present as

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claimed in the form of the pin 27. Although Applicant is correct that this functions as a backup for normal impact ignition, no self-neutralizing mode is disclosed in claim 1 that distinguishes over Levy.

15. The prior art is full of descriptions of self-destruction modes in cargo projectile warheads, wherein a mechanism activates after impact to ensure that the grenade is detonated. However, there are no references to a self-neutralizing mode that deactivates the grenade by safely burning the stab detonator away from the main charge, as described in Applicant's arguments (bottom of page 24 through the 2nd-to-last paragraph of page 25) and the specification (page 14, lines 13-27 of the specification filed 4/02/2004) and claim 3, part (a).

16. If Applicant were to amend the claims, in particular claim 1, to state that the fuze has a self-neutralizing mode and further that this mode encompasses the limitations of 3a, the claim would overcome the art of Levy.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stewart T. Knox whose telephone number is (571) 272-8235. The examiner can normally be reached on Monday through Thursday, 8:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on (571) 272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

STK


MICHELLE CLEMENT
PRIMARY EXAMINER